

U.S. Patent Application Serial No. 10/541,746
Amendment filed November 24, 2008
Reply to OA dated July 28, 2008

AMENDMENTS TO THE CLAIMS:

Please add new claim 37, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously presented): An ocular lens material comprising at least one kind of a compound (A) having an ethylenically unsaturated group and polydimethylsiloxane structure through a urethane bond and at least one kind of a pyrrolidone derivative (B) in which a polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring.

Claim 2 (Previously presented): An ocular lens material according to Claim 1, comprising 5 to 60 % by weight of the pyrrolidone derivatives in which the polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring.

Claim 3 (Previously presented): An ocular lens material according to Claim 1 or 2, wherein the pyrrolidone derivatives in which the polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring is 1-alkyl-3-methylene-2-pyrrolidone.

Claim 4 (Original): An ocular lens material according to Claim 3, wherein the 1-alkyl-3-methylene-2-pyrrolidone (B) is 1-methyl-3-methylene-2-pyrrolidone.

Claim 5 (Previously presented): An ocular lens material according to Claim 1 or 2, wherein at least one of the pyrrolidone derivatives in which the polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring is 1-alkyl-5-methylene-2-pyrrolidone.

Claim 6 (Original): An ocular lens material according to Claim 5, wherein the 1-alkyl-5-methylene-2-pyrrolidone (B) is 1-methyl-5-methylene-2-pyrrolidone.

Claim 7 (Previously presented): An ocular lens material according to Claim 1 or 2, wherein at least one of the pyrrolidone derivatives in which the polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring is 5-alkyl-3-methylene-2-pyrrolidone.

Claim 8 (Original): An ocular lens material according to Claim 7, wherein the 5-alkyl-3-methylene-2-pyrrolidone (B) is 5-methyl-3-methylene-2-pyrrolidone.

Claim 9 (Original): An ocular lens material according to Claim 1, wherein the repeating number of siloxane of the polydimethylsiloxane structure in a compound (A) having ethylenically unsaturated groups and polydimethylsiloxane structure through a urethane bond is 10 to 100.

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Claim 10 (Previously presented): An ocular lens material according to Claim 1, wherein tensile modulus is 0.2 to 0.8 MPa and stress relaxation under loading a fixed load for 30 seconds is 8 to 15 %.

Claim 11 (Previously presented): An ocular lens material according to Claim 1, wherein water content is 10 to 60 % by weight.

Claim 12 (Previously presented): An ocular lens material according to Claim 1, wherein water content is 32 to 55 % by weight.

Claim 13 (Original): An ocular lens material according to Claim 1, wherein (C) a silicone compound other than the compound (A) having ethylenically unsaturated groups and polydimethylsiloxane structure through a urethane bond is contained.

Claim 14 (Original): An ocular lens material according to Claim 13, wherein the silicone compound (C) is tris(trimethylsiloxy)silylpropyl (meth)acrylate.

Claim 15 (Previously presented): An ocular lens material according to Claim 1 or 13, wherein a N-substituted acrylamide (D) is further comprised.

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Claim 16 (Original): An ocular lens material according to Claim 15, wherein the N-substituted acrylamide (D) is at least one of N-substituted acrylamides selected from the group consisting of N,N-dimethyl acrylamide, N,N-diethyl acrylamide, acryloyl morpholine, N-isopropyl acrylamide and N-(2-hydroxyethyl) acrylamide.

Claim 17 (Previously presented): An ocular lens material according to Claim 1 or 13, wherein at least one of a crosslinking agent is further comprised.

Claim 18 (Previously presented): A lens for the eyes comprising the ocular lens material according to Claim 1.

Claim 19 (Previously presented): A method for preparing an ocular lens material, comprising

- a) a step of obtaining a mixed solution comprising at least one kind of a compound (A) having ethylenically unsaturated groups and polydimethylsiloxane structures through a urethane bond and a hydrophilic monomer (B) comprising at least one kind of a pyrrolidone derivative in which a polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring and a photo polymerization initiator and/or a thermal polymerization initiator,
- b) a step of introducing said mixed solution to a mold,
- c) a step of obtaining an ocular lens material cured by irradiating UV light on and/or heating the mixed solution in said mold,

d) a step of carrying out surface treatment to said ocular lens material after demolding said ocular lens material to impart hydrophilicity and deposit resistance,

e) a step of removing an unreacted component from said ocular lens material, and

f) a step of hydrating said ocular lens material.

Claim 20 (Previously presented): A method for preparing the ocular lens material according to Claim 19, wherein in the step of obtaining a mixed solution, the mixed solution further comprises a silicone compound (C) and an N-substituted acrylamide (D).

Claim 21 (Original): A method for preparing the ocular lens material according to Claim 19 or 20, containing a crosslinking agent in the mixed solution.

Claim 22 (Previously presented): A method for preparing the ocular lens material according to Claim 19 or 20, containing at least one of polymerizable or non polymerizable ultraviolet absorbents and/or at least one of polymerizable or non polymerizable dyes in the mixed solution.

Claim 23 (Previously presented): A method for preparing the ocular lens material according to Claim 19 or 20, comprising 0.1 to 5 % by weight of a water-soluble organic solvent.

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Claim 24 (Original): A method for preparing the ocular lens material according to Claim 23, wherein the water-soluble organic solvent is a water-soluble organic solvent selected from alcohols having 1 to 4 carbons, acetone, methyl ethyl ketone, dimethylformamide, dimethylsulfoxide, acetonitrile and N-methyl-2-pyrrolidone.

Claim 25 (Original): A method for preparing the ocular lens material according to Claim 19, wherein the surface treatment is plasma treatment.

Claim 26 (Original): A method for preparing the ocular lens material according to Claim 25, wherein oxygen or a mixture of oxygen is used in the plasma treatment.

Claim 27 (Original): A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and water is used in the plasma treatment.

Claim 28 (Original): A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and tetrafluoromethane is used in the plasma treatment.

Claim 29 (Original): A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and organic silane is used in the plasma treatment.

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Claim 30 (Original): A method for preparing the ocular lens material according to Claim 29, wherein the organic silane is tetramethoxysilane.

Claim 31 (Original): A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and methane is used in the plasma treatment.

Claim 32 (Original): A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen, nitrogen and methane is used in the plasma treatment.

Claim 33 (Original): A method for preparing the ocular lens material according to Claim 19, wherein the surface treatment is a treatment according to the coating method of a hydrophilic polymer coating.

Claim 34 (Original): A method for preparing the ocular lens material according to Claim 33, wherein the coating method is a plasma polymerization method of a hydrophilic monomer.

Claim 35 (Original): A method for preparing the ocular lens material according to Claim 33, wherein the coating method is a plasma-induced graft polymerization.

Claim 36 (Original): A method for preparing the ocular lens material according to Claim 19, further comprising (g) a step of coloring the ocular lens material by using a vat dye.

Claim 37 (New): A method for preparing an ocular lens material, comprising

- a) a step of obtaining a mixed solution comprising at least one kind of a compound (A) having ethylenically unsaturated groups and polydimethylsiloxane structures through a urethane bond and a hydrophilic monomer (B) comprising at least one kind of a pyrrolidone derivative in which a polymerizable group is a vinylidene group that includes a carbon atom of a pyrrolidone ring and a photo polymerization initiator and/or a thermal polymerization initiator,
- b) a step of introducing said mixed solution to a mold,
- c) a step of obtaining an ocular lens material cured by irradiating UV light on and/or heating the mixed solution in said mold,
- d) a step of carrying out surface treatment to said ocular lens material after demolding said ocular lens material to impart hydrophilicity and deposit resistance, and
- e) a step of removing an unreacted component from said ocular lens material and a step of hydrating said ocular lens material, at the same time by immersing in distilled water or a saline solution.